## REMARKS/ARGUMENTS

Claims 1-3 and 6-11 are pending herein. The amendment to claim 1 is supported by Figs. 12(a) and 12(b) and pages 23-26 in the specification, for example. Claim 7 has been amended in light of the amendments to claim 1. Applicants respectfully submit that no new matter has been added.

Claims 1-3 and 6-11 were rejected under §103(a) over Kato '181 in view of Yamada and Sugiyama, and further in view of Kato '335. To the extent that this rejection may be applied against the amended claims, it is respectfully traversed.

Amended claim 1 recites a gas sensor comprising the sensor element having a gas-introducing hole close to an end of the sensor element, the sensor including a reference gas-introducing space, a clogging preventative space, a buffering space and a first space for introducing a measurement gas from the gas-introducing hole via the clogging preventative space, the buffering space and a first diffusion rate determining section. A main pumping means controls the partial pressure of the oxygen contained in the measurement gas introduced into the first space to be substantially constant. The sensor element further includes a second space for introducing the measurement gas in the first space via a second diffusion rate determining section and an electric signal generating converting means for reducing or decomposing a NOx component contained in the measurement gas introduced from the second space, via a third diffusion rate determining section, to generate an electric signal corresponding to the amount of oxygen produced, so that the concentration of NOx existing in the measurement gas is determined from the electric signal. A first detecting means includes an inner electrode in the first space and a reference electrode in the reference

gas introducing space. A heater maintains at least the first space and the second space at a predetermined temperature, where $0.3 \leq (Wc/We) < 0.7$, and We represents a lateral width of the end of the sensor element, and Wc represents a lateral width of the gas-introducing hole, and $0.2 < (La/We) < 0.5$, where La represents a distance from a projected position of the end of the heater on the upper surface of the sensor element to the end of the sensor element. Amended claim 1 further recites that the projected position of the end of the heater on the upper surface of the sensor element extends only to the starting end of the first space on the upper surface of the sensor element and an air-fuel ratio of the measurement gas is determined by the first detecting means from a voltage between the inner electrode and the reference electrode and the pumping current of the main pumping means.

Kato '181 discloses a gas sensor element including a gas-introducing hole, a first chamber, a second chamber, a first diffusion rate determining section, and a signal generating converting means for reducing or decomposing a NOx component contained in the measurement gas. The PTO relies upon Yamada for disclosure of a gas sensor element meeting the claimed Wc/We ratio. The PTO relies upon Sugiyama for teaching the distance between the end of the sensor element and the beginning of the heater is a result effective variable. The PTO relies upon Kato '335 for showing a heater coincident with the starting end of a measuring space.

Amended claim 1 is distinguishable from the cited references because each of the cited references fails to teach or suggest a gas sensor that includes a clogging preventative space and a buffering space in the gas sensor between the gas-introducing hole and the first space. More specifically, the gas sensor of Kato '181 include only a

first diffusion rate determining section 26 between gas introducing port 22 and the first chamber 18, as shown in Fig. 1 of Kato '181. In contrast, amended claim 1 recites a sensor element that includes a reference gas-introducing space, a clogging preventative space, a buffering space, a first space and the measurement gas is introduced from gas-introducing hole to the first space via the clogging preventative space, the buffering space and a first diffusion rate determining section. Therefore, the gas sensor of amended claim 1 is structurally distinct from the gas sensor element disclosed by Kato '181.

The gas sensors disclosed by Sugiyama, Yamada and Kato '335 fail to overcome the deficiencies of Kato '181. In addition, with respect to Kato '335, the PTO incorrectly states that Kato '335 discloses the beginning of the heater coincident wit the starting end of the measuring space. As shown in Fig. 1 of Kato, the end of ceramic layer 96 is coincident with the end of the first space, not heater element 94.

Based on the above, the cited references, alone or in combination, fail to teach or suggest each and every element of amended claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

For at least the foregoing reasons, Applicants respectfully submit that all pending claims herein are in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for this application in due course

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

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